Title	**Describe the purpose and application of cathodic protection in an energy and chemical plant**		
Level	**4**	**Credits**	**2**

Purpose	People credited with this unit standard are able to describe the purpose and application of cathodic protection in an energy and chemical plant.

Classification	Energy and Chemical Plant > Monitoring of Energy and Chemical Plant

Available grade	Achieved

Guidance Information

1 Legislation relevant to this unit standard includes but is not limited to:
- Health and Safety at Work Act 2015;
- Hazardous Substances and New Organisms Act 1996;
- Resource Management Act 1991;
and any subsequent amendments.

2 Definitions
Energy and chemical plant may be in – petrochemical, agri-nutrient, power generation, dairy processing, meat processing, and wood fibre manufacturing, or other plants that operate with a combination of high temperatures, pressures, steam and/or chemicals in gas, liquid or solid form.
Holiday detection refers to non-destructive testing for locating discontinuities, pinholes, and voids in surface and pipeline coatings.
Organisational requirements – documented policies and procedures. These may include: equipment manufacturers' procedures; plant procedures; suppliers' instructions; site signage; codes of practice; company health and safety plans; on site briefings; and supervisor's instructions. This includes all regulatory and legislative obligations that apply to the plant.
Plant – the operational unit, equipment, and/or workplace at which the person is working.

3 For the purposes of assessment:
- evidence of all outcomes must be presented in accordance with organisational requirements.

Outcomes and performance criteria

Outcome 1

Describe the purpose and application of cathodic protection in the energy and chemical plant.

Performance criteria

1.1 Describe cathodic protection in terms of its purpose and use.

1.2 Describe cathodic protection in terms of the reasons for the regular survey of cathodic protection systems.

1.3 Describe cathodic protection in terms of the different protection system corrosion prevention techniques available.

Range galvanic, impressed current.

1.4 Describe the causes of corrosion in an energy and chemical plant that may require cathodic protection.

1.5 Describe the survey of a cathodic protection system by a Holiday detection monitor.

1.6 Describe cathodic protection in terms of which international cathodic protection standards are applied in an energy and chemical plant.

1.7 Describe the purpose of cathodic protection system equipment in an energy and chemical plant.

Range impressed current rectifier, anode beds, galvanic anodes, test points, corrosion coupons, flange insulation kit.

1.8 Describe cathodic protection in terms of the typical voltage range of an operating cathodic protection system operating in an energy and chemical plant.

1.9 Describe the cathodic protection survey equipment in terms of its purpose.

Range copper sulphate half-cell, multi-meter, data logger, cathodic protection system interruption device, direct current voltage gradient (DCVG) meter, pipe locator, flange isolation tester, current measuring swain clamps.

Replacement information	This unit standard was replaced by skill standard 40362.

This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	6 February 1997	31 December 2018
Revision	2	3 August 2000	31 December 2018
Review	3	24 January 2002	31 December 2018
Review	4	20 February 2009	31 December 2018
Rollover and Revision	5	20 April 2017	31 December 2022
Review	6	27 February 2020	31 December 2026
Review	7	30 January 2025	31 December 2026

Consent and Moderation Requirements (CMR) reference	0079

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.